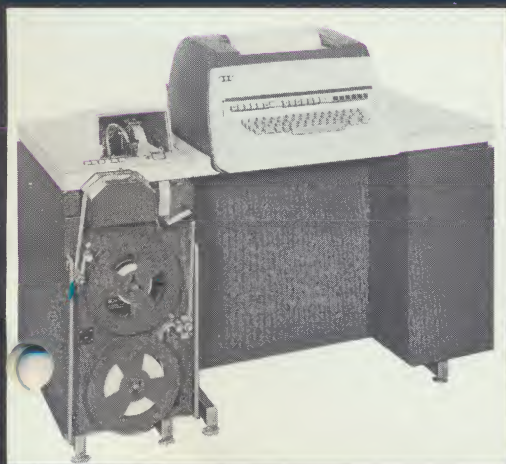


model **37**



TELETYPE MODEL 37 PRODUCT CATALOG

APRIL, 1969, EDITION



model 37

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introduction and catalog use



This catalog describes Teletype Model 37 equipment for transmitting data over switched network services available through telephone and telegraph companies. These terminals can be used for general data communications as well as for computer input/output. The application of the Model 37 terminal to the switched network requires a data set or data access arrangements provided by the common carriers.

Each particular set (e.g., the Model 37/300 automatic send-receive set) is available in five arrangements with options for each arrangement. These include table variations, paper handling, and tape handling facilities.

A catalog number with each set arrangement in combination with each option allows easy ordering of a complete terminal.

Catalog numbers for Model 37/300 automatic send-receive sets include a punch and reader module. However, if, initially an application requires use of a keyboard send-receive set (KSR) for conversion to an ASR in the future, the ASR set can be ordered less the punch and reader module: For example:

Catalog No. 37/302-1A ASR set complete.

Catalog No. 37/302-1AX ASR set without the punch and reader module.

The resulting catalog number, 37/300-1AX, is the KSR required as denoted by the "X" following the number.

Brief Description

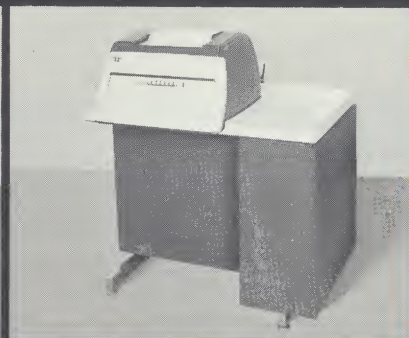
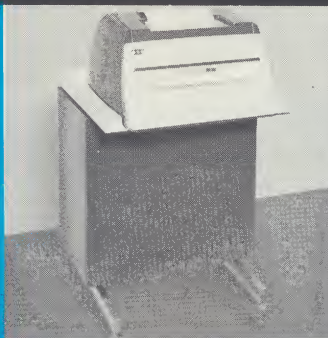
Terminals described in this catalog are normally utilized for point-to-point data communications, or, as computer input/output terminals. Maximum data transfer rate is 150 words per minute.

The family of terminals in this catalog includes the following terminal configurations:

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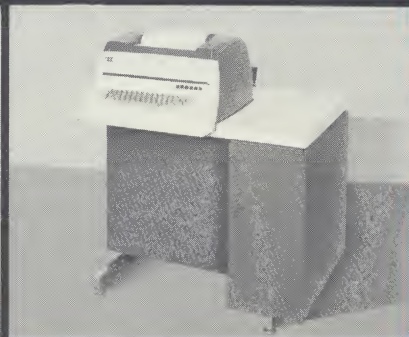
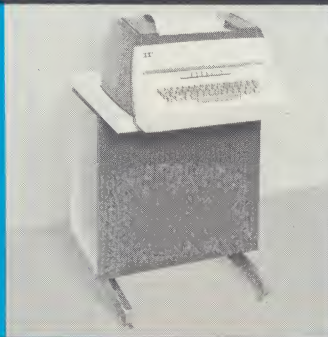
Model 37/100 Receive-only sets (RO)

These sets provide for receiving printed page copy only. They do not have transmitting capabilities except when equipped with a station identification generator (answer-back mechanism).



Model 37/200 Keyboard send-receive sets (KSR)

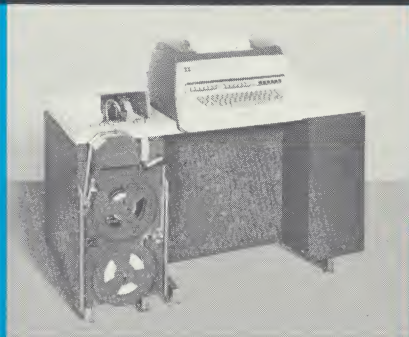
Model 37/200 terminals are keyboard-equipped for sending to other terminals or computers. Outgoing data is typed on the page printer for visual checking. The terminal can also be arranged for full-duplex operation which allows simultaneous sending and receiving.



Model 37/300 Automatic send-receive set (ASR)

Model 37/300 terminals are a combination of an appropriate KSR set and a punch and reader module.

This configuration is the complete terminal. It has the capabilities of the RO and KSR sets in addition to providing off-line and on-line tape reading and punching. Tape handling also can be included in the punch and reader module cabinet for operator convenience. This gives you maximum data handling capabilities from a single terminal.



General Characteristics

Speed and Signal: Model 37 terminals operate at 150 words per minute (15 characters per second) at a 150 baud transmission rate. The sets utilize a serial input/output 10 unit code signal consisting of a start bit, seven information bits, an even parity bit, and a stop bit. Each bit is 6.67 milliseconds in duration.

Code: Model 37 handles the USAS X-3.4 ASCII Code and prints the 94 graphics of this code with letters in both up-

per and lower case. Adding a Shift-Out feature allows printing either 16 or 32 additional graphics.

Printing: The standard terminal uses a 6-row removable typebox with provisions for 96 type pallet positions. When a Shift-Out feature is included, the 6-row typebox is replaced with a 7-row typebox allowing 112 type pallet positions, or it can be replaced with an 8-row typebox allowing 128 type pallet positions.

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THIS IS A SAMPLE OF A MODEL 37 PRINTOUT.

Model 37 prints standard numerals, symbols, and upper and lower case letters. In two-colors, if desired.

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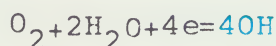
ABCDEFGHIJKLMN O PQRSTU VWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890!"#$%&'(<{ =_}~
|\^]-[>@`+;*:,./
    
```

The following will demonstrate the use of reverse line space, half reverse line space, line space, and half line space. With these features we may print mathematical expressions:

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} \dots$$

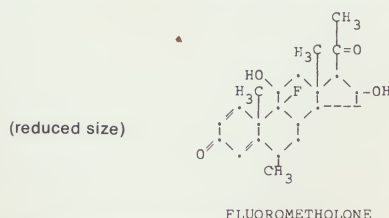
These features also permit us to print chemical expressions:



Utilizing half forward and reverse line space, graphs also can be readily constructed.



Hydrocarbon molecular structures may also be constructed:



Among the latest features to be made available in the Teletype Model 37 is on-line tab setting for both vertical and horizontal tabulation.

Lets look first at Horizontal Tabulation:

- 1—We clear all tabs:
- 2—Set the tab-stops as required:
- 3—Transmit the message:

(reduced size)	1234 7890 3456 9012	5678 1234 7890 3456	9012 5678 1234 7890	3456 9012 5678 1234
----------------	------------------------------	------------------------------	------------------------------	------------------------------

To change the format, we again clear and reset the tab-stops:

1234 9012 7890 5678	(reduced size)	5678 3456 1234 9012
------------------------------	----------------	------------------------------

Vertical tab setting is accomplished using the above procedure except that Form-Feed is required to locate the beginning of the form prior to vertical tab clear.

Power Requirements: - 115VAC $\pm$ 10%, 60 HZ $\pm$.45 HZ
 RO... Approx. 200 Watts
 KSR... Approx. 300 Watts
 ASR... Approx. 550 Watts
 Circuit to handle set fused at 15 amp.

Maintenance Interval: - Lubrication every six months or every 1500 operating hours, whichever occurs first.

Under normal operation conditions, 10,000 hours of operation can be expected without major overhaul.

Dimensions and weight:

	Height	Width		Depth
		Arrangements 1 thru 4*	Arrangement 5*	
RO	36-1/4"	32-1/2"	22-1/2"	24-1/4"
KSR	36-1/4"	32-1/2"	22-1/2"	27-1/2"
ASR	36-1/4"	44-1/2"	34-1/2"	27-1/2"

Approx. Weight

	Arrangements 1 thru 4*	Arrangement 5*
--	------------------------	----------------

RO	214 lbs	180 lbs
KSR	221 lbs	185 lbs
ASR	340 lbs	304 lbs

Environment: - Operating: 40° to 110° F. ambient measured outside of printer cover.
 Relative humidity: 95% Maximum.

Interface: Model 37 terminal interface**meets requirements of Electronics Industries Association Standard RS-232-B. No coupling device is required between the Model 37 terminal and any compatible data set or equivalent unit. This simplifies installation and maintenance of the terminal.

*See pages 15, 18, 21, and 24 for arrangements.

**For more information see Supplementary Technical Data on pages 26 and 27.

Control Panel



Control Panel

Depending on the set configuration, the control panel can contain 6, 12, or 18 combination keys and/or lamps. The following is a description of each individual key and lamp combination available for Model 37 terminals. However, to determine the combination of key and/or lamps for a particular terminal, review the appropriate terminal description chart in this catalog. (Note: The particular key feature follows the actual key designation.)

RECEIVE – ONLY TERMINALS (RO)

LOCAL RETURN – PAPER ADVANCE

Local Return and Paper Advance Keys. These keys initiate mechanical actions for local paper advance and carriage return. With the set's motor on and Paper Advance key depressed, the paper continuously advances until key is released. With the motor on or off, depressing the Local Return key will provide a single carriage return. Neither operation affects the signal line.

INTRPT

Interrupt Key. This key, when depressed, initiates a 380 to 690 millisecond spacing pulse. The pulse, when recognized by a distant transmitting station, can stop transmission from a keyboard, reader, or other transmitting device as would be required if some abnormal operating condition existed (i.e., paper or tape jams or tears).

HERE-IS

Here-Is Key. The answer-back mechanism is associated with this key. Depressing the key initiates transmission of a station identification code (or other information as coded) to a distant terminal.

OUT-OF-SERVICE

Out-of-Service Key and Lamp. This key, when momentarily depressed, conditions the "out-of-service" feature that prevents the terminal from responding to an incoming call. This feature normally is used to allow the replenishment of paper, ribbons, etc. The associated lamp is "on" when the "out-of-service" condition exists. It's restored to normal when key is depressed and lamp extinguished.

ERROR

Error Key and Lamp. When the terminal is equipped with vertical parity detection, this lamp indicates an error condition by lighting upon receipt of a parity errored character. Depressing the key extinguishes the lamp.

PTR EOL

Printer End-of-Line Lamp. A lamp is used on the control panel to give visual indication that the page printer carriage printing position is approaching the right hand margin. The "end-of-line" indication can be adjusted to take place anywhere on the page printer platen.

ALARM

Alarm Key and Lamp. This lamp indicates "paper-out" for pin feed page printer sets and "low-paper" indication for friction feed sets. If a paper-out or "low-paper" condition occurs during transmission, the lamp lights. For friction and pin feed page printers, upon completing transmission the terminal won't respond to further calls until the supply is replenished.

The Alarm lamp is also used in some arrangements to indicate receipt of a character with incorrect even vertical parity. When an errored character is received the lamp will light and remain on until the Alarm key is depressed.

PAPER ALARM

Low Paper Alarm Key and Lamp. This lamp when lighted signifies a "low paper supply" condition for a friction feed printer or a "paper out" condition for a pin feed printer. If the alarm was activated by a low or exhausted paper supply during transmission, the transmission continues until completed. The station won't respond to further data service until the paper supply is replenished. At this time the Alarm lamp is automatically extinguished.

Note: Control panels will not contain a Low Paper Alarm key and lamp or an Error key and lamp if equipped with the Alarm key and lamp.

KEYBOARD SEND-RECEIVE TERMINALS (KSR) can be provided with any of the RO controls in addition to the following:

PROCEED

Proceed Key and Lamp. The feature associated with this key and lamp enables the keyboard to respond or not respond under control of a distant transmitting terminal or computer. The Proceed lamp will be "on" and the keyboard enabled to respond, when the terminal EIA interface lead "clear-to-send" is "on" and the terminal has received the ASCII Control Character Acknowledge (ACK).

The Proceed lamp is extinguished and the keyboard in a condition not to respond by the loss of "clear to send" or upon receipt of the ASCII control character, Negative Acknowledge (NAK), or upon receipt of an "interrupt" (break) signal.

After contact with a distant terminal has been made, the keyboard can always be enabled by depressing the Proceed key, or upon receipt of acknowledge (ACK). If an "interrupt" signal is received, the keyboard can only be enabled to respond by depressing the Proceed key.

Note: Control of the keyboard by the ASCII control characters, ACK and NAK not available on some terminals.

OFF-LINE

Off-Line Key and Lamp. This key when operated places the set off-line with the motor running. In this mode, the terminal can be used for maintenance, training, typing practice or miscellaneous uses. The lamp is lighted when in the "off-line" mode and is extinguished by depressing the associated key. When the lamp is "off" the motor is controlled by the state of the EIA interface lead "data set ready".

AUTOMATIC SEND-RECEIVE TERMINALS (ASR) can be provided with any of the RO or KSR controls in addition to the following:

PROCEED

Proceed Key and Lamp. On an ASR set, the feature provides identical control of the keyboard. It also controls the tape reader.

READER AUTO

Automatic Reader Control Key and Lamp. When the key is depressed its lamp lights and the station is conditioned for on-line control of the reader. A second operation of the key extinguishes its light and disables the on-line reader control feature. On-line or local control of the reader is affected by the use of the ASCII control character DC1 for "reader on" and DC3 for "reader off". Since these controls are interpreted by mechanisms in the page printer, the printer and reader must both be either in the on-line or off-line mode.

KBD EOL

Keyboard End-of-Line. This lamp, used in conjunction with a keyboard character counter, provides visual indication of "end-of-line" condition when the page printer isn't utilized as a monitor. On an automatic send-receive set (ASR), tape can be prepared without page copy by observing the on/off state of the lamp to judge the end of a printed line.

KBD LOCAL

Keyboard Local Key and Lamp. When the key is depressed the lamp lights and the keyboard is placed in "local off-line" circuit. A second operation of the key extinguishes its lamp and restores the keyboard to on-line condition.

PRINTER LOCAL

Printer Local Key and Lamp. When key is depressed the lamp lights and the printer is placed in "local off-line" circuit. A second depression of the key extinguishes its lamp and restores the printer to on-line condition.

PUNCH LOCAL

Punch Local Key and Lamp. When key is depressed the lamp lights and the punch is placed in "local off-line" circuit. The punch selector may or may not respond depending upon the state of the Punch On key. Depressing the key again extinguishes its lamp and restores the punch to "on-line" condition.

PUNCH ON

Punch-On Key and Lamp. When key is depressed the lamp lights and the punch will respond for tape preparation. A second depression of the key extinguishes its lamp and the punch will not respond to additional signals. The punch can be set not to respond either locally or in the on-line mode by the operator.

READER LOCAL

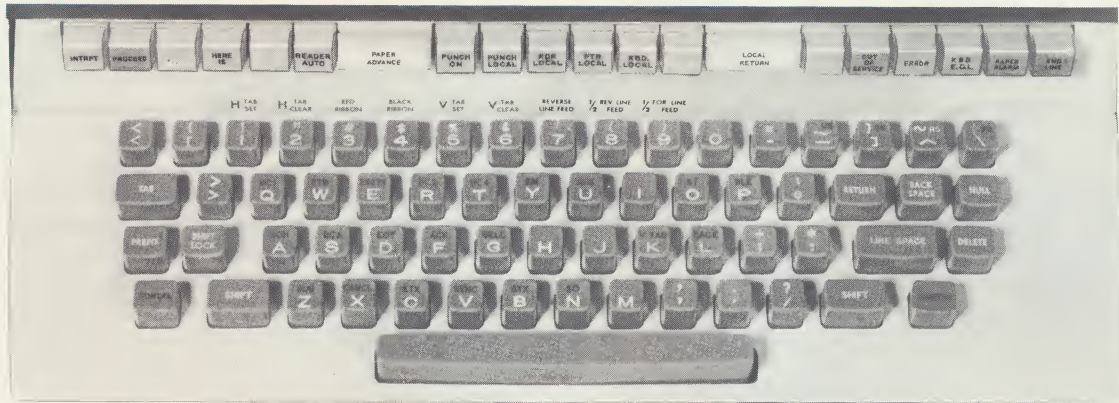
Reader Local Key and Lamp. Depressing this key places the reader in "local off-line" circuit and lights the lamp. Depressing the key again allows the reader to transmit on-line.

All components of an ASR (e.g., printer, keyboard, punch and reader) are interoperative in either the "on-line" or "local" modes or combinations thereof. This depends upon the on or off state of the associated control panel light. Such flexibility permits various modes of operation including simultaneous data reception and local tape preparation. In addition, the reader can read a variety of non-ASCII coded tapes, provided the printer or punch is "on-line".

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Keyboard



Keyboard

The Model 37 keyboard provides a layout of keys similar to a standard office typewriter. You can generate the entire 128 ASCII character set with an extra bit to provide even vertical parity over the eight bits.

A pertinent feature of the keyboard permits you to repeat any character desired by depressing a key beyond its normal stop. Any key can be made repeatable by a simple field modification. In the standard arrangement, the ten most commonly used keys in the shift and unshift states are repeatable. They are as follows:

Line Space	Colon (:) or Asterisk (*)
Space	Hyphen (-) or Equals (=)
Null	Shift and Unshift Period (.)
Backspace	Shift and Unshift Underscore (_)
Delete	Upper and Lower Case X

The keyboard is also equipped to provide control functions. You simply depress the Control key and the desired graphic key simultaneously. Most control character designations require using the Control key. Control designations appear in black on the distinctive dark grey keytop. In addition, commonly used controls (such as Horizontal Tabulation, Backspace, Carriage Return and Line Space) are generated by separate keys not requiring operation with the Control key. Another feature is the override capability of the control key when the keyboard is in shift-lock condition. This permits generating control characters without having to unshift.

The following list shows control characters which the Model 37 can generate:

Keytop Designation	Mnemonic	ASCII Control Character
NULL	NUL	Null
SOH	SOH	Start of Heading (CC)
STX	STX	Start of Text (CC)
ETX	ETX	End of Text (CC)
EOT	EOT	End of Transmission (CC)
ENQRY	ENQ	Enquiry (CC)
ACK	ACK	Acknowledge (CC)
BELL	BEL	Bell (Audible signal)
BACKSPACE	BS	Backspace (FE)
TAB	HT	Horizontal Tabulation

Keytop Designation	Mnemonic	ASCII Control Character
LINE SPACE		
V Tab	VT	Vertical Tabulation (FE)
PAGE	FF	Form Feed (FE)
RETURN	CR	Carriage Return (FE)
SO	SO	Shift Out
SI	SI	Shift In
DLE	DLE	Data Link Escape
DC1	DC1	Device Control 1
DC2	DC2	Device Control 2
DC3	DC3	Device Control 3
DC4	DC4	Device Control 4 (Stop)
NAK	NAK	Negative Acknowledge (CC)
SYNC	SYN	Synchronous Idle (CC)
ETB	ETB	End of Transmission Block (CC)
CANCL	CAN	Cancel
EM	EM	End of Medium
SUB	SUB	Substitute
PREFIX	ESC	Escape
FS	FS	File Separator (IS)
GS	GS	Group Separator (IS)
RS	RS	Record Separator (IS)
US	US	Unit Separator (IS)
DELETE	DEL	Delete*

*Not a control character in the strict sense. Principally used for deleting unwanted characters in perforated tape.

NOTE: (CC) Communication Control
(FE) Format Effector
(IS) Information Separator

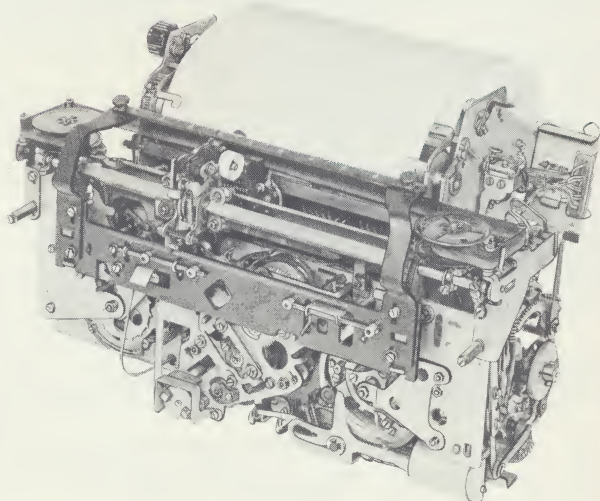
Shift characters (those characters on upper portion of key-top) are generated by depressing the shift key and desired graphic key. The shift state is retained by operating the shift-lock key. To release back to unshift state, depress the shift key.

A keyboard interlock prevents errors caused by simultaneous depression of two keytops.

Keyboard signal output is generated by contacts which provide parallel contact closures to electronic logic. The logic serializes the keyboard information for local transmission to a receiving device within the terminal (punch or printer) or on-line to a distant station. An electrical keyboard blind can be provided to prevent keyboard transmission when the terminal is receiving. (See control panel description.)

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Page Printer



Page Printer

Printing. The 94 printing graphics of the ASCII code are produceable, (the space and delete characters are not normally printed) and contained in a six row typebox. The typebox is easily removed for cleaning or substitution by the operator.

Platens. Standard 8½" friction feed platens as well as 9½" overall paper width pin feed platens are basic to the page printer. Other platens will be made available for use with the Model 37 printer.*

Horizontal Spacing. Ten characters per inch horizontal spacing is standard on the printer with 12 char./inch spacing optional.

Line Spacing. Line spacing is six lines/inch with a lever control selectable by the operator to provide three lines per inch. Note: Double Line Space (3 lines/inch) not available on page printers equipped with reverse or one-half forward and reverse Line Space.

Line Lengths. Printing line is factory adjusted for 72 characters (normal margins) with capability up to 80 characters for 8½" friction feed platens and up to 80 characters with a 9½" pin feed platen. Left and right margins can be adjusted for almost any length line up to the maximum by a maintenance man.

Variable Print Density. To impart a higher or lower impact to the type pallets, the operator can adjust the print ham-

mer with a control knob located conveniently near it. On friction feed page printers this control provides clear copy on the last sheet of up to three copies (one original and two copies with necessary carbons or carbon bodied sheets). On pin feed printers this control provides up to six copies (one original and five tissues with necessary carbon backing sheets). More copies can be printed depending on the type of paper used. Friction feed page printers can accept paper rolls from 3" to 8½" wide.* Pin feed printers can accept forms of overall widths of 9½" Printing occurs twelve line spaces from the paper tearing edge of the copywindow.

Backspace. Correcting errors and special formatting are just two of the uses for the printer backspace. This feature is controlled by the ASCII control character for backspace (BS) either on-line from a distant station or locally by the operator from the keyboard. Receipt of each backspace character backs up the printing carriage one space.

Print Position Scale. A print position scale is just forward of the printer platen. It's graduated from one character up to the character limit of the platen width. This scale makes it easy to determine margins or tab positions when this information is related in characters from the left edge of the paper or business form.

Print Point Indicator. To aid the operator, a print point indicator moves along the page printer platen indicating the exact position of the next character to be printed.

Stunt Box. Recognition of control characters and character sequences is performed by a "Stunt Box." This mechanical device is similar to the stunt boxes used on other Teletype page printers and provides the same reliable operation.

Typically, the Stunt Box initiates actions for Carriage Return, Line Space, Horizontal Tabulation, etc. In addition, contact closures are provided for terminal disconnect (EOT), Signal Bell, etc.

All control characters sensed by the stunt box, including the space and delete characters, must be received with correct even vertical parity in order for the function to be performed. Exception is made for the Carriage Return and Line Space functions (ASCII Line Feed character).

All graphics in columns 2 through 7 of the ASCII code will print with either parity. However, the Alarm or Error lamp,

*For more information see Supplementary Technical Data on pages 26 and 27.



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as determined by the control panel arrangement, will light upon receipt of a character with incorrect even vertical parity.

New Line. This feature, is standard on the page printer. It provides the convenience of operating Carriage Return-Line Space functions by depressing only the Line Space key. When using this feature and operating at 150 words per minute, two timing or buffer characters are required following the Line Space character (ASCII Line Feed character-LF). The timing characters can be any character (e.g., Delete or Null) which doesn't affect terminal or system operation. The New Line feature can be easily disabled by the customer, if desired.* If the feature is not used, one timing character is required following the Carriage Return-Line Feed sequence when operating at 150 wpm.

Shift-Out. This feature, when provided on the page printer, allows printing 16 or 32 special graphics plus the 94 standard printable graphics of the ASCII code. Type pallets for these extra graphics are handled by either a 7-row typebox (16 new graphics) or an 8-row typebox (32 new graphics) in place of the standard 6-row typebox. Rows are added at the top.

Activation of this feature occurs when the page printer receives the ASCII control character for Shift-Out (SO). All following characters from columns 4 or 5 of the ASCII code will be interpreted as special graphics by the page printer—then printed using the type pallets in either a 7 or 8-row typebox. The printer is restored to normal upon receipt of the ASCII control character Shift-In (SI). While in the SO mode, columns 2 and 3 print in the normal manner, allowing access to numerics and punctuation marks. Also, the unit continues to respond to control characters in the SO mode.

When used with Backspace, Half Line Space, Full Reverse Line Space, Horizontal and Vertical Tabulation features, there's virtually no special format (including charts, graphs, etc.) which can't be handled by the Model 37 terminal. Weather, medical, chemical, mathematical, scientific, and an unlimited number of other special symbols can be utilized.

Design of the typebox allows incorporation of many special type pallets which are currently available. The pallets can be found in Teletype Bulletin, No. 1164B.

Horizontal Tabulation and Tab Setting. Besides horizontal

tabulation, the page printer is capable of horizontal tabulation stop setting, from on-line signals generated from a distant station or locally from the keyboard. Formatting which previously required maintenance man setting of each tab stop for a purchase order, invoice, etc., has been eliminated. Tab stops for each character position on the platen are set up by a two-character sequence and the tabs cleared for a new format with another two-character sequence. After the desired tab stops are set, the operator tabs to the required position on the form either locally or on-line by merely depressing the Tab keytop on the keyboard. Depressing the key generates the ASCII Horizontal Tabulation (HT) control character. The carriage will tab at approximately three times the rate of normal spacing.

Vertical Tabulation and Tab Setting. Vertical tabulation, an aid in form preparation, is available on the page printer. It's operator controlled from the keyboard and by on-line signals from a distant terminal using the ASCII Vertical Tabulation (VT) control character. Furthermore, when changing from one form to another, the printer's tab setting feature allows a vertical tab stop to be set for every line position by a two-character sequence from the keyboard or on-line from a distant station. Tabs can be cleared for another format by using another two-character sequence. Vertical tabulation takes place at approximately three times the rate of normal line spacing.

Form-Feed. This feature is associated with vertical tabulation and aids in preparing forms or other material. It allows the operator to select and set the first printing line of a form. When the ASCII character for Form-Feed (FF) is received the page will feed at approximately three times the rate of normal line spacing to the first printing line on the next form. Form-Feed is non-repeatable. It won't respond unless each Form-Feed character is separated by an ASCII Line Feed control character.

This feature conserves forms if a Form-Feed character is received when the page printer is in print position. Both friction and pin feed printers use this feature. They're presently offered equipped to form-feed 11 inches. Various length form-feed parts will be available to handle forms up to 15 inches in length.

Reverse Line Space and Half Forward and Reverse Line Spacing.

These features, controlled by two-character sequences, enable the operator or a distant terminal to follow formats which had been previously impractical or impossible. In addition, correction of errors,

*For more information see Supplementary Technical Data on pages 26 and 27.

model 37

Control Logic Module

printing of fractions, and other operations are easily accomplished. When these features are in a page printer with Vertical Tabulation and Form Feed, the line spacing rate of the Vertical Tabulation and Form Feed is approximately one and one-half times the normal rate of line spacing (and the Double Line Space feature is not provided).

Two Color Printing. This feature, controlled by the operator or on-line from a distant terminal, responds to a two-character sequence for one color and another two-character sequence for the other color. Normally, printing will be red-black.

This feature has many uses. For example: Computer-linked terminals could be assigned black for data transmitted to the computer while the computer could reply with red printed data. This simply requires, in this example, that the computer prefaces a statement to the terminal with the proper two-character sequence for red printing and terminates the statement with the proper sequence for black printing. In addition, editing, highlighting, etc., can be done locally or on-line.

When a terminal is turned on, the ribbon will shift to the ribbon color chosen for the terminal. When using red-black ribbons, terminals normally are in the state to print in black.

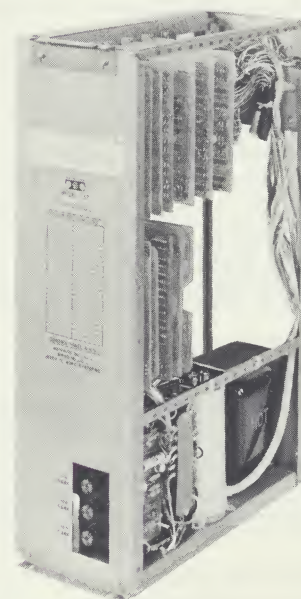
Escape. Control functions other than those defined by specific ASCII control characters are initiated by using the ASCII control character Escape (ESC) followed by a graphic character. (Escape is designated on the keyboard as the Prefix keytop).

Recognition of "escape" sequences is performed by the stunt box which, in turn, activates the selected control function. Printing is suppressed for all characters in the Escape sequence. The page printer always returns to the unsuppressed mode after the graphic character unless the graphic of the "escape" sequence is in column 2 of the ASCII code. Print and space suppression will be affected continually as long as all following graphics are from this row.

The control function description for the "escape" sequence is labeled on the control panel above the top row of keytops on the keyboard and is as follows:

SEQUENCE	FUNCTION
Prefix followed by Numeric 1	Horizontal Tab set
Prefix followed by Numeric 2	Horizontal Tab clear
Prefix followed by Numeric 3	Red Printing
Prefix followed by Numeric 4	Black Printing
Prefix followed by Numeric 5	Vertical Tab set
Prefix followed by Numeric 6	Vertical Tab clear
Prefix followed by Numeric 7	Reverse Line-Space

Prefix followed by Numeric 8 — Half Reverse Line-Space
Prefix followed by Numeric 9 — Half Forward Line-Space
Prefix followed by Colon (:) — Full Duplex
Prefix followed by Semi-colon (;) — Half Duplex



Control Logic Module

The Model 37 control logic module is approximately 5 $\frac{3}{4}$ " wide, 13" deep and 20" high. This module mounts in the lower portion of the KSR or RO cabinet, and connects to the keyboard, printer, etc., with plug-in cables. It's designed for easy maintenance by utilizing electronic circuit cards containing standard electronic components and micrologic elements. Options are implemented by substituting cards, adding cards, adding cards onto existing cards in piggyback fashion, and adding or removing wire straps.

The following are the main functions and features of the control logic module:

Interface. Model 37 terminal interface meets requirements of Electronics Industries Association Standard RS-232-B. Most applications require no coupling device between the Model 37 terminal and the data set. Installation and maintenance of the terminal are thus simplified.

Set Control Logic. Send control logic controls all sending

Cabinets, Paper Handling and Miscellaneous

devices such as the keyboard, reader, or answer-back mechanism. Control is accomplished by channeling the signaling information from these devices to either local internal signal circuits or on-line signal circuits.

Receive control logic controls incoming data to the proper receiving units. These units include the page printer or the punch of the punch and reader module.

Mode control logic provides set timing and controls the operation of all sending or receiving devices on-line or in local mode in "on" or "off" condition.

Channel control logic provides information to a data set or a similar control device concerning the terminal's receiving status. It also accepts information about the line connection status of the terminal. In addition to the above controls, each sending or receiving device (for example, the answer-back, printer and keyboard) has associated logic.

Automatic Motor Control. Model 37 terminal motors are on only when required. Local control of motors is provided by control panel keys while on-line control is provided by the "on" or "off" state of the EIA Interface lead "data set ready."

When on-line, the motors are turned off and the terminal deactivated upon receipt of ASCII End-Of-Transmission character (EOT).

Answer-Back Mechanism. This unit plugs into the control logic module. It provides a 20 character programmable character sequence when activated by (1) detection (ENQ character or by (2) operation of Here-Is key on control panel or by (3) the data set or control device at the beginning of a call by an "on" condition at the EIA interface lead, "ring indicator."

Received Signal Regenerator. This feature allows terminal tolerance of up to 40% signal distortion on receive data lead input.* Optional features (for use with the regenerator) detect incorrect vertical parity and provide visual indication of this condition.

On-Line Control of Home Copy: By providing recognition of a two character sequence, Model 37 terminal can print any information transmitted from its sending devices or received from a distant station (Home Copy Mode-Half-Duplex). After receipt of another two character sequence, the terminal stops printing information from its sending devices and only responds to on-line signals (Full-Duplex). The terminal will be in "Home Copy-Mode" at the beginning of transmission. An op-

tion is available for the customer to permanently strap the terminal in the "Full" or "Half-Duplex" modes.

Character Counter. With this feature you get a visual indication on the terminal control panel (Keyboard End-of-Line lamp) whenever a preset number of graphic characters and spaces are generated from the keyboard.

The unit counts down on Backspace. It won't count control characters or those characters included in two character "escape" sequences.

Resetting the Character Counter is accomplished by the ASCII control character Line Feed (New Line). The counter can be optionally reset on the Carriage Return and Line Feed character sequence if the New Line feature is not desired, by cutting a strap on the counter circuit card located within the control logic module.

Signal Bell. An alarm or attention device that responds to the ASCII Bell character. In addition, it can signal a distant station of an important message, an abnormal operating condition, etc.

Cabinets, Paper Handling and Miscellaneous

Console Assembly. This assembly houses the typing unit, base, keyboard, motor assembly, and control panel. The assembly is mounted on a desk type table arrangement that houses the terminal control logic module.

Copylights. The console assembly provides a pair of copylights for easy copy viewing. There is also a convenient paper tearing edge on the copy viewing window.

Tables. Two tables are available for Model 37 terminals. Both are shown on the particular feature charts.

Wide tables provide space to the right and below the printer console to house data sets or similar devices. Dimensions of this opening are 22" deep x 8¾" wide x 21" high. Also, convenient workspace is provided for the operator on the table to the right of the printer console.

Narrow tables are similar to the wide tables except for omission of space to the right of the printer console. These tables are normally used where space is a factor in the application. A data set mounting shelf will be available for narrow tables.

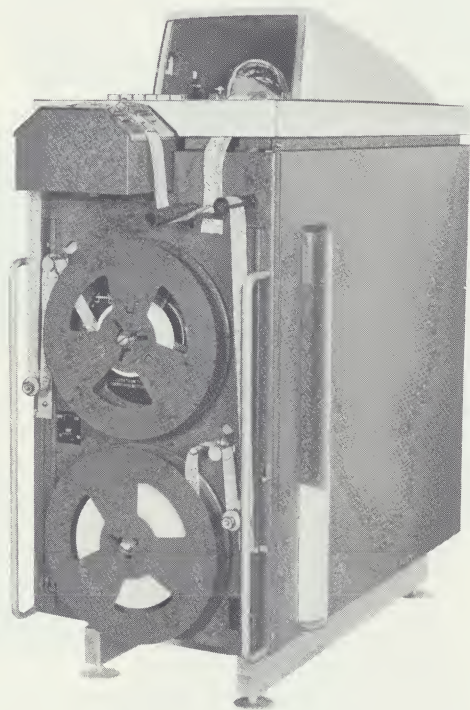
*For more information see Supplementary Technical Data on pages 26 and 27.

model 37

Punch and Reader Module

Power Distribution Panel. The table houses a convenient AC input power distribution panel. This panel provides power outlets for such terminal components as the control logic module, punch and reader module, etc. It also provides outlets for maintenance equipment or other devices. Primary AC power input originates from a single power cord. A single AC circuit breaker located on this panel controls input power (with individual fuses for various other power outputs located on the control logic module front panel.)

Paper Handling. Paper handling options are offered for either front or rear paper loading. Present sets use forms 11" long and 9½" wide. A form accumulator (rear of printer console) conveniently stacks the printed forms. Parts to equip terminals to handle most commonly used form sizes will be made available. See Supplementary Technical Data on pages 26 and 27.



Punch and Reader Module

This unit consists of a tape punch and reader mounted in a cabinet assembly. When placed adjacent and electrically

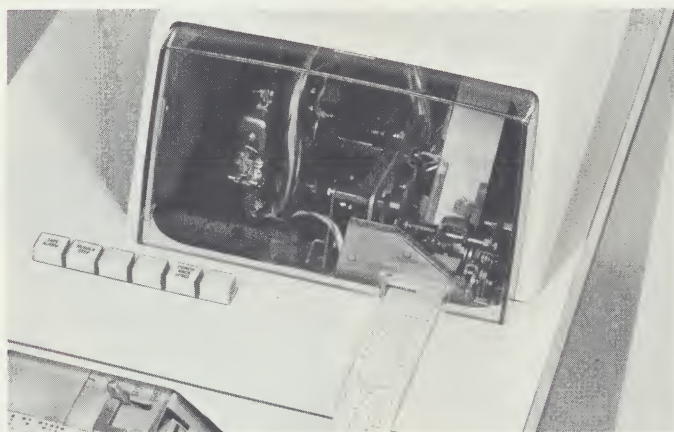
connected to an appropriate keyboard send-receive set (KSR) the combination forms an automatic send-receive set (ASR).

Speed. The punch and reader module can read and punch tape at 150 words per minute. You can operate it in a variety of "on-line" and "off-line" combinations with the keyboard and the page printer. This versatility allows data transmission at the on-line rate of 150 words per minute since messages can be punched in an "off-line" mode. In addition, the tape punch can operate on-line to provide a machine readable record of any desired incoming information.

Tape Supply. A supply container for a standard 8" roll of tape (nominally 1,000 ft.) is provided in the cabinet for the tape punch and is easily accessible under the hinged punch cover assembly. The cabinet top is also hinged and provides easy access to the internal components of the punch and reader for maintenance.

Tape Handling. Tape handling options include an intermediate tape storage bin which handles approximately 50 feet of perforated tape. Other tape handling combinations are available which may include any of the following:

1. One tape winder, handles one standard 8" roll (nominally 1,000 ft.)
2. One tape winder, and a combination winder and power unwinder, each having a capacity for a standard 8" roll (nominally 1,000 ft.)



PUNCH

Tape. A non-typing punch is an integral part of the module. The unit produces 8-level fully punched tape conforming to USAS X3.18.



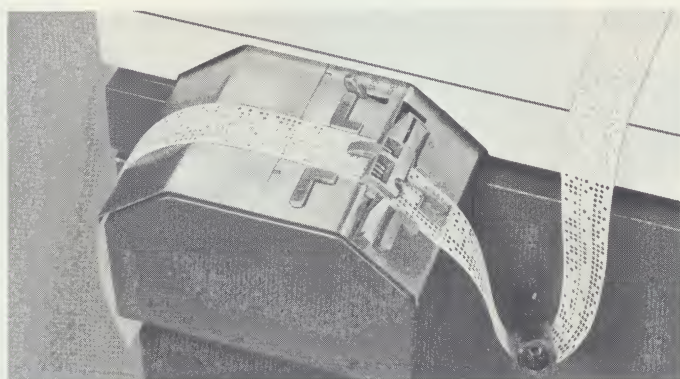
model **37**

Backspace. The unit is equipped with off-line backspace. For each operation of the Backspace key, the punch backspaces the tape one-character interval. The key is located on the module control panel.

Tape Feed-Out. A manually operated tape feed-out arrangement is provided. When the Feed-Out lever, located inside the cover, is operated, Delete characters are perforated at the machine rate of 150 words per minute. The feed-out is an "interfering-type" arrangement. Consequently, it obliterates the character punched if signals are received during its operation. Feed-out is normally used only when threading tape.

Punch Control. The punch can be operated in response to on-line signals. This feature is part of the page printer and control logic of the ASR set. When the ASCII control character DC2 is received, the punch is activated. When the control character DC4 is received, the punch is deactivated.

Operator Aids. A clear plastic container for tape chad is located on the cabinet where it's easily seen by the operator. Under this arrangement the chance of chad being spilled is eliminated. Another operator aid, the Alarm lamp on the punch and reader control panel, lights up when the tape supply roll is approximately 2½" in diameter (25' to 30' of tape remaining).



READER

Tape. The reader senses fully perforated eight-level tape conforming to USAS X3.18.

Tape Alarms. A tape-out sensor (located in the reader) gives the operator visual indication of a "Tape-Out" condition by lighting the tape Alarm lamp on the module control panel. In addition, tape sensing is also stopped. Since this sensor is located 4 characters ahead of sensing, a trailer of at least 4 characters is required at end of message.

A Tight Tape switch is provided on the cabinet between the punch and the reader. Should the punching and reading take place simultaneously, the tape won't tear if the slack between punch and reader is taken up since the switch stops the reader until slack is present. In addition, the Alarm lamp lights up when this condition occurs.

Reader Step. A Reader Step key is located on the module control panel. Each time depressed, it steps the reader forward one character (reader switch must be in stop position). The character will be read and transmitted.

Reader Control. A Run-Stop-Free switch is located on the reader. When in "Free" the feed wheel is free and the tape may be pulled through the reading head without opening the tape lid. The switch is operated to "Run" position when tape is in place and ready for transmission. When in "Stop" or "Free" tape transmission can't take place.

Automatic Reader Control. This feature operates in conjunction with a key on the printer console control panel (Reader Auto). When this key is depressed the reader turns "on" when the terminal receives the ASCII control character DC1 and turns "off" upon receipt of control character DC3. Reader can be controlled on-line or off-line.

Control logic is available (within the KSR portion of the ASR set) to provide a one-character delay (optionally) after a control character is read. This minimizes the need for fill characters. The feature stops the reader on the control character, Read.

Punch and Reader Control Logic. The punch and reader utilizes control logic, consisting of circuit cards and necessary internal wiring housed in a metal framed module mounted internal to the cabinet. This unit is approximately 5¾" wide, 13" deep and 14½" high. It also contains necessary interconnecting cabling and a power cord that plugs into the appropriate KSR set.

model 37

37/100 Graphic Feature Information

Page 14, Fold-out pages 15 and 16.

Control Panels

Arrangements 1, 2, 3, and 4



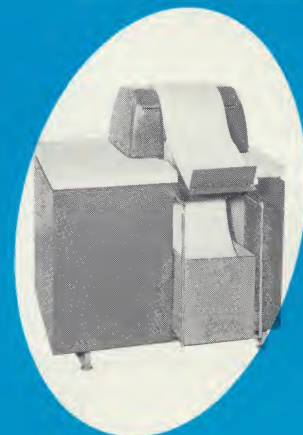
Arrangement 5



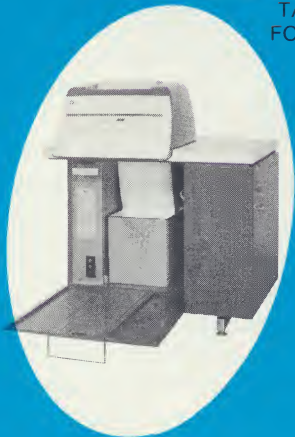
TABLE & CONSOLE
FOR ARRANGEMENT
1, 2, 3, & 4



TABLE & CONSOLE
FOR ARRANGEMENT 5



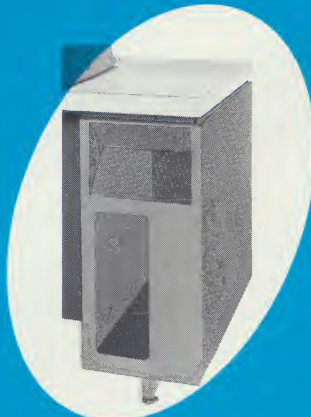
REAR PAPER LOADING
FOR SETS WITH PIN
FEED PAGE PRINTERS



FRONT PAPER
LOADING FOR SETS
WITH PIN FEED PAGE
PRINTERS



BLANK RIGHT DOOR



RIGHT DOOR W/CUT-
OUT FOR SETS
UTILIZING BELL
SYSTEM 103H DATA
SETS AND 804P
TYPE ATTENDANT SET
OR EQUIVALENT

Model 37/100 Receive-Only Terminals (RO) For Switched Network Services

GENERAL CHARACTERISTICS APPLICABLE TO ALL 37/102 TERMINALS (RO)

SPEED: 150 wpm—150 Baud—15 CPS

CODE: USAS X3.4 ASCII—7 Level

SIGNAL: Serial input and output, 10 unit code

1 start—7 information—1 parity* and

1 stop bit

INTERFACE: EIA RS-232-B

INPUT POWER: 115 VAC $\pm$ 10%, 60 HZ $\pm$.45 HZ

APPROX. 200 Watts—15 Amp. fused circuits

PRINTING: Upper and lower case—94 graphics

PAINT FINISH: Charcoal gray and Ivory

*Even parity over the 8 bits.

10 Character/Inch Horizontal Spacing
Backspace
6-Row Typebox—Removable by Operator
Signal Bell
Terminal Disconnect on E.O.T. Character
Printing Line 72 Characters (Adjustable)
Print Suppression on Control Functions
Operator Control for Variable Print Density
Adjustable Switch for Varying End-of-Line Indicator (Lamp)
Motor Control (Carriage Return) and Paper Advance (Line Space)
Receiving Control (On-Line)
Control Panel for Terminal Regenerator
Copy Lights for Easy Copy Viewing
Interrupt Generation (Timed Line-Break)
Even Parity Error Indicator (Error L
Two-Position Line Space
Low Paper Switch
Paper Out

ARRANGEMENT NO.	COMPONENT FEATURES (NOTE 3)																OPTIC			
1 8½" FRICTION FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2 9½" PIN FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3 8½" FRICTION FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4 9½" PIN FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
5 8½" FRICTION FEED PLATEN AND NAR- ROW TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Alarm Lamp)
 ver for 3 or 6 Line Spaces/Inch (Note 1)
 and Alarm (Lamp)
 Switch and Alarm (Lamp)
 Horizontal Out-of-Service Key
 Horizontal Tabulation
 Horizontal Tabulation Stop Setting
 Form Feed for 11" Forms
 Vertical Tabulation
 Vertical Tabulation Stop Setting
 Two Color Printing
 Half Line Space Forward and Reverse
 Reverse Line Space
 Shift-Out (SO) for Additional Graphics (Note 2)
 Right Door W/Cutout for Attendant Set
 Blank Right Door
 Blank Right Door and Rear Paper Loading
 Data Set Mounting Shelf

GENERAL FEATURE GROUPS (NOTE 3)										CABINETRY OPTIONS (NOTE 3)					CATALOG NO.
										•					37/102-1A
•	•	•	•										•		37/102-1B
										•					37/102-2A
											•				37/102-2B
												•			37/102-2C
•	•	•	•	•	•	•							•		37/102-2D
														•	37/102-2E
														•	37/102-2F
										•					37/102-3A
•	•	•	•	•	•	•	•	•	•				•		37/102-3B
										•					37/102-4A
											•				37/102-4B
												•			37/102-4C
•	•	•	•	•	•	•	•	•	•				•		37/102-4D
														•	37/102-4E
														•	37/102-4F
															37/102-5A
														•	37/102-5B

Note 1: Not available on page printer equipped with the half forward or reverse line space feature.

Note 2: A 7 or 8-row typebox is available which contains a standard arrangement of ASCII graphics in the lower six rows and one or two vacant upper rows for additional graphics. Special type-pallets are available.

See Teletype Bulletin 1209B or 1214B

Note 3: All features are operable in local or on-line modes unless otherwise specified.

Model 37/200 Keyboard Send-Receive Terminals (KSR) For Switched Network Services

GENERAL CHARACTERISTICS APPLICABLE TO ALL 37/202 TERMINALS (KSR)

SPEED: 150 wpm — 150 Baud — 15 CPS
CODE: USAS X3.4 — ASCII 7-Level
SIGNAL: Serial input and output — 10 Unit Code
1 Start—7 Information—1 Parity* and
1 Stop Bit
INTERFACE: EIA RS-232-B
INPUT POWER: 115 VAC $\pm$ 10%, 60 $\pm$.45 HZ
APPROX. 300 Watts--15 Amp. Fused Circuits
PRINTING: Upper and Lower Case—
94 Graphics
KEYBOARD: 4 Row—128 Code Combi-
nations with even Vertical
Parity
Paint Finish: Charcoal Gray
and Ivory

*Even Parity over the 8 bits

10 Character/Inch Horizontal Spacing
Backspace
6-Row Typebox—Removable by Operator
Signal Bell
Terminal Disconnect on E.O.T. Character
Printing Line 72 Characters (Adjustable)
Print Suppression on Control Functions
Operator Control for Variable Print Density
Adjustable Switch for Varying End-of-Line Indicator (Lamp)
Adjustable Left and Right Margins (Maintenance Man)
Half or Full Duplex Operation (Strap Option)
Motor Control
Receiving Signal Regenerator, Even Parity Error Detec.
Control Panel for Terminal Supervision
Copy Lights for Easy Copy Viewing
Interrupt Generation (Timed Line-Break)
Repeat Feature on 10 Keyboard
Low Paper Switch and Alert
Paper Out Switch
Two-Pass

ARRANGEMENT NO.

COMPONENT FEATURES (NOTE 3)

OF

1
8½" FRICTION FEED
PLATEN AND WIDE
TABLE

2
9½" PIN FEED
PLATEN AND WIDE
TABLE

3
8½" FRICTION FEED
PLATEN AND WIDE
TABLE

4
9½" PIN FEED
PLATEN AND WIDE
TABLE

5
8½" FRICTION FEED
PLATEN AND NAR-
ROW TABLE

Alarm (Lamp)
 Alarm and Alarm (Lamp)
 Position Line Space Lever for 3 or 6 Line Spaces/Inch (Note 1)
 Horizontal Line Space Lever for 3 or 6 Line Spaces/Inch (Note 1)
 Horizontal Tabulation
 20 Character Codeable Answer-Back
 Half or Full Duplex (Machine Controlled)
 Form Feed for 11" Forms
 Vertical Tabulation
 Terminal Tabulation Stop Setting
 Two Color Printing
 Half Line Space Key
 Reverse Line Space
 Shift-Out (SO) for Additional Graphics (Note 2)
 Right Door W/ Cutout for Attendant Set
 Blank Right Door
 Blank Right Door and Rear Paper Loading
 Data Set Mounting Shelf

OPTIONAL FEATURE GROUPS (NOTE 3)												CABINETRY OPTIONS (NOTE 3)				CATALOG NO.
												•				37/202-1A
•	•	•	•											•		37/202-1B
												•				37/202-2A
													•			37/202-2B
														•		37/202-2C
•	•	•	•	•	•	•								•		37/202-2D
															•	37/202-2E
															•	37/202-2F
												•				37/202-3A
•	•	•	•	•	•	•	•	•	•	•				•		37/202-3B
												•				37/202-4A
													•			37/202-4B
														•		37/202-4C
•	•	•	•	•	•	•	•	•	•	•				•		37/202-4D
															•	37/202-4E
															•	37/202-4F
																37/202-5A
															•	37/202-5B

Note 1: Not available on page printer equipped with the half forward or reverse line space feature.

Note 2: A 7 or 8-row typebox is available which contains a standard arrangement of ASCII graphics in the lower six rows and one or two vacant upper rows for additional graphics.

Special Type pallets are available. See Teletype Bulletin 1209B or 1214B

Note 3: All features are operable in local or on-line modes unless otherwise specified.

model 37

37/200 Graphic Feature Information

Fold-out pages 17 and 18, and 19.

Control Panels

Arrangements 1 and 2



Arrangements 3 and 4



Arrangement 5



TABLE & CONSOLE
FOR ARRANGEMENTS
1, 2, 3, & 4



TABLE & CONSOLE
FOR ARRANGEMENT 5



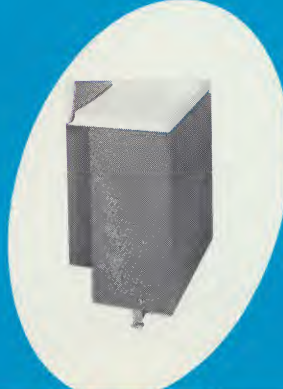
RIGHT DOOR W/CUT-
OUT FOR SETS
UTILIZING BELL
SYSTEM 103H DATA
SETS AND 804P TYPE
ATTENDANT SET
OR EQUIVALENT



BLANK RIGHT DOOR



REAR PAPER LOADING
FOR SETS WITH PIN
FEED PAGE PRINTERS



BLANK RIGHT DOOR

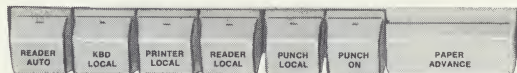
model 37

37/300 Graphic Feature Information

Page 20, Fold-out pages 21 and 22.

Control Panels

Arrangements 1 and 2



Arrangements 3 and 4



Arrangement 5

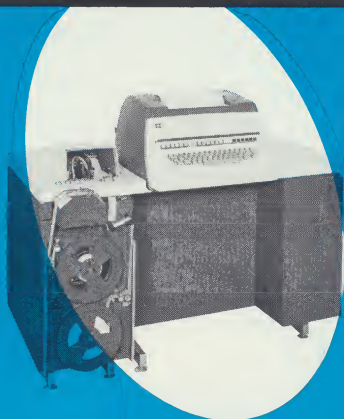
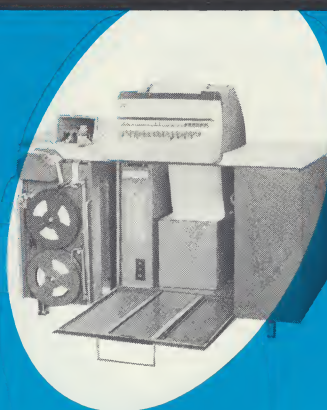


TABLE & CONSOLE
FOR ARRANGEMENTS
1, 2, 3, 4, & 5

FRONT PAPER
LOADING FOR SETS
WITH PIN FEED PAGE
PRINTERS



BLANK RIGHT DOOR



REAR PAPER LOADING
FOR SETS WITH
PIN FEED PAGE
PRINTERS

RIGHT DOOR W/CUT-
OUT FOR SETS
UTILIZING BELL
SYSTEM 103H DATA
SETS AND 804P TYPE
ATTENDANT SET OR
EQUIVALENT



Model 37/300 Automatic Send-Receive Terminals (ASR) For Switched Network Services (Note 5)

GENERAL CHARACTERISTICS APPLICABLE TO ALL 37/302 TERMINALS (ASR)

SPEED: 150 wpm—150 Baud—15 CPS
CODE: USAS X3.4 ASCII 7-level
SIGNAL: Serial input and output—10 Unit Code
1 Start—7 information—1 parity*
and 1 stop bit
INTERFACE: EIA RS-232-B
INPUT POWER:
115VAC $\pm$ 10%, 60 $\pm$.45 HZ
APPROX. 550 Watts—
15 Amp. fused circuits
PRINTING: Upper and Lower Case—
94 graphics
KEYBOARD: 4 row-128 code
combinations with
even vertical parity
PAINT FINISH: Charcoal
Gray and Ivory

*Even parity
over the 8 bits.

10 Character/Inch Horizontal Spacing
Backspace
6-Row Typebox—Removable by Operator
Signal Bell
Terminal Disconnect on E.O.T. Character
Printing Line 72 Characters (Adjustable)
Operator Control on Control Functions
New Line—Carriage Return and Line Space
Adjustable Switch for Varying Print Density
Adjustable Return and Line Space on Line Feed Character
Adjustable Left and Right Margins and Paper Advance (Lamp)
Half or Full Duplex Operation (Maintenance Man)
Motor Control
Receiving Signal Regenerator, Even Parity Error Detec.
Control Panel for Terminal Supervision
Copy Lights for Easy Copy Viewing
Interrupt Generation (Timed Line-Break)
Repeat Feature on 10 Keyboard Keys
Keyboard Character Counter
Low Paper Switch and Alarm (Lamp)
Paper Out Switch and Alarm (Lamp)
Two-Position Line Space
Terminal Out

ARRANGEMENT NO.	COMPONENT FEATURES (NOTE 3)																				OPTION
1 8½" FRICTION FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2 9½" PIN FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3 8½" FRICTION FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4 9½" PIN FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
5 8½" FRICTION FEED PLATEN AND WIDE TABLE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Control of Proceed (Keyboard Blind)
 Horizontal Tabulation
 Horizontal Tabulation Stop Setting
 20 Character Codeable Answer-Back
 Half or Full Duplex (Machine Controlled)
 Punch and Reader Control
 Form Feed for 11" Forms
 Vertical Tabulation
 Vertical Tabulation Stop Setting
 Two Color Printing
 Half Line Space Forward and Reverse
 Reverse Line Space
 Shift-Out (SO) for Additional Graphics (Note 2)
 Right Door W / Cutout for Attendant Set
 Right Door W / Cutout for Attendant Set
 Blank Right Door
 Blank Right Door
 Blank Right Door and Rear Paper Loading
 No Tape Handling on Punch and Front Paper Loading
 With Tape Storage Bin on Punch and Reader Module
 Tape Storage Bin on Punch and Reader Module
 Model 37/400 Module Suffix. See Page 25 for Description (Note 4)

AL FEATURE GROUPS (NOTE 3)												CABINETRY OPTIONS (NOTE 3)												CATALOG NO.	
												•							•			1B	37/302-1A	Note 1: Not available on page printer equipped with the half forward or reverse line space feature.	
												•								•		1C	37/302-1B		
															•				•			1B	37/302-1C		
															•					•		1C	37/302-1D		
													•						•			1B	37/302-2A	Note 2: A 7 or 8-row typebox is available which contains a standard arrangement of ASCII graphics in the lower six rows and one or two vacant upper rows for additional graphics. Special type pallets are available. See Teletype Bulletin 1209B or 1214B	
													•							•		1C	37/302-2B		
															•					•		1B	37/302-2C		
															•						•		1C		37/302-2D
																•			•			1B	37/302-2E	Note 3: All features are operable in local or on-line modes unless otherwise specified	
																•				•		1C	37/302-2F		
																		•		•		1B	37/302-2G		
																		•			•		1C		37/302-2H
												•							•			1C	37/302-3A	Note 4: Model 37/300 Data communications terminals include a punch and reader module to form a complete set. If only the keyboard send-receive (KSR) portion of any of the sets shown on this page are required. Place an X after the particular catalog number (i.e., 37/302 1AX)	
												•								•		1D	37/302-3B		
															•					•		1C	37/302-3C		
															•						•		1D		37/302-3D
													•						•			1C	37/302-4A	Note 5: Model 37/300 Data communications terminals require a punch and reader module to form a complete set. (A Catalog No. on this page represents a complete, compatible ASR Set).	
													•							•		1D	37/302-4B		
															•					•		1C	37/302-4C		
															•						•		1D		37/302-4D
																•			•			1C	37/302-4E		
																•				•		1D	37/302-4F		
																		•		•		1C	37/302-4G		
																		•			•		1D		37/302-4H
												•						•				1A	37/302-5A		
												•							•		1B	37/302-5B			
															•				•			1A	37/302-5C		
															•					•		1B	37/302-5D		

22

Note 1: Not available on page printer equipped with the half forward or reverse line space feature.

Note 2: A 7 or 8-row typebox is available which contains a standard arrangement of ASCII graphics in the lower six rows and one or two vacant upper rows for additional graphics. Special type pallets are available. See Teletype Bulletin 1209B or 1214B

Note 3: All features are operable in local or on-line modes unless otherwise specified

Note 4: Model 37/300 Data communications terminals include a punch and reader module to form a complete set. If only the keyboard send-receive (KSR) portion of any of the sets shown on this page are required. Place an X after the particular catalog number (i.e., 37/302 1AX)

Note 5: Model 37/300 Data communications terminals require a punch and reader module to form a complete set. (A Catalog No. on this page represents a complete, compatible ASR Set).

Handling Capability
 Level Container
 No Tape Handling
 With Tape Storage Bin
 With 1 Tape Winder and Storage Bin 8½" Tape Reels (Note 1)
 With 1 Tape Winder, 1 Tape Winder/Unwinder & Tape Storage Bin, 8½" Tape Reels *

OPTIONAL FEATURES											CATALOG NO.
•											37/402-1A
	•										37/402-1B
		•									37/402-1C
			•								37/402-1D

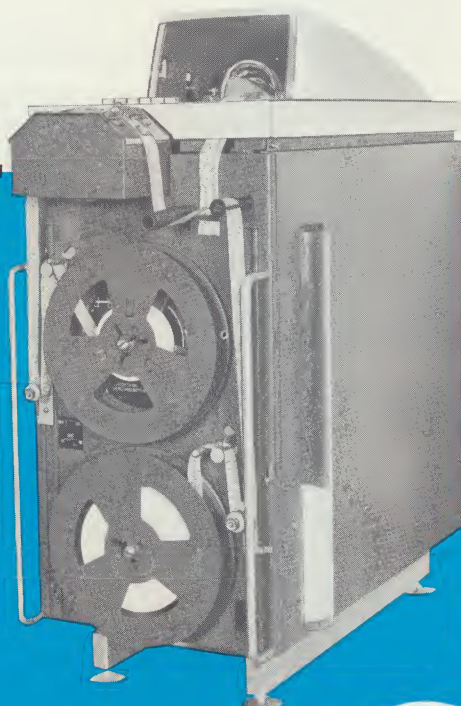
*See supplementary,
 Technical Data, Pages
 26 and 27, for part number.

model 37

37/400 Graphic Feature Information

Fold-out pages 23 and 24, and 25.

CONTROL PANEL



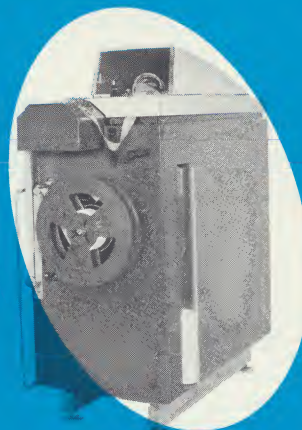
WITH TAPE WINDER,
TAPE WINDER/UN-
WINDER AND TAPE
STORAGE BIN



NO TAPE HANDLING



WITH TAPE STORAGE
BIN MORE THAN
50-FOOT CAPACITY



WITH TAPE WINDER
AND TAPE STORAGE
BIN



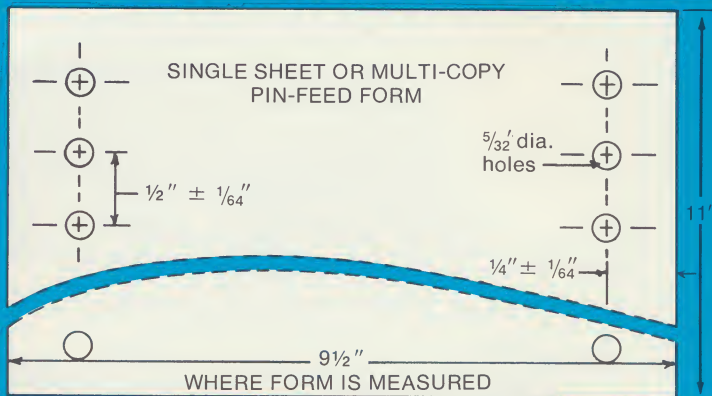
TAPE STORAGE BIN—
OVER 50-FT. CAPACITY
(REMOVED FROM
PUNCH & READER
MODULE)

model

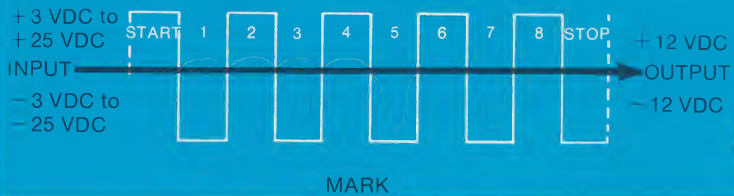
Supplementary Technical Data

ASCII X3.4 CODE

X3.4 - 1987														
Bits				b ⁷	b ⁶	b ⁵	O	O	O	O	1	1	1	1
b ₄	b ₃	b ₂	b ₁	Column Row										
O	O	O	O	O	NUL	DLE	SP	O	@	P	'	p		
O	O	O	1	1	SOH	DC1	!	1	A	Q	a	q		
O	O	1	O	2	STX	DC2	"	2	B	R	b	r		
O	O	1	1	3	ETX	DC3	#	3	C	S	c	s		
O	1	O	O	4	EOT	DC4	\$	4	D	T	d	t		
O	1	O	1	5	ENQ	NAK	%	5	E	U	e	u		
O	1	1	O	6	ACK	SYN	&	6	F	V	f	v		
O	1	1	1	7	BEL	ETB	'	7	G	W	g	w		
1	O	O	O	8	BS	CAN	(	8	H	X	h	x		
1	O	O	1	9	LF	EM	)	9	I	Y	i	y		
1	O	1	O	10	HT	SUB	*	:	J	Z	j	z		
1	O	1	1	11	VT	ESC	+	:	K	[	k	{		
1	1	O	O	12	FF	FS	,	<	L	\	l			
1	1	O	1	13	CR	GS	-	=	M	]	m	}		
1	1	1	O	14	SO	RS	.	>	N	^	n	~		
1	1	1	1	15	SI	US	/	?	O	_	o	DEL		



TYPICAL SIGNAL WAVE FORM SPACE



LOGIC OF THE MODEL 37 TERMINAL

DATA CIRCUITS (EIA)

Binary State	One	Zero
Signal Condition	Marking	Spacing
Voltage	Negative	Positive
Paper Tape	Hole	No-Hole
Model 37 Send	− 12V	+ 12V
Model 37 Receive	− 25V to − 3V	+ 25V to + 3V

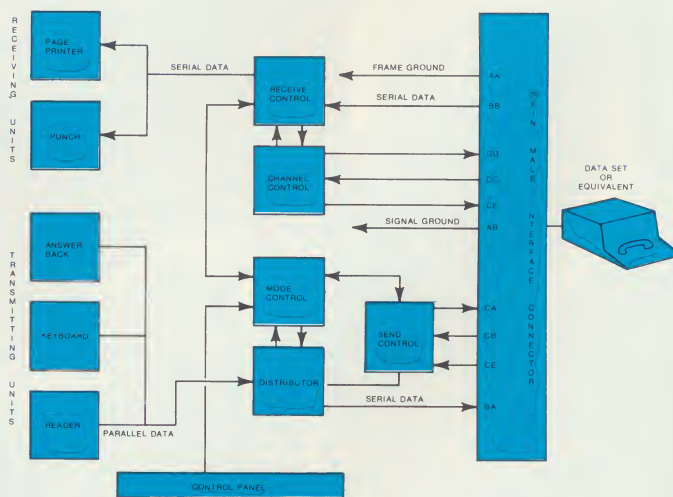
CONTROL INTERFACE CIRCUIT TERMS (EIA)

Control Function	Off	On
Voltage	Negative	Positive
Voltage from Model 37	− 12V	+ 12V
Voltage to Model 37	− 25V to − 3V	+ 25V to + 3V

SPEED DATA

Characters		Per Second	15
Operations		Per Minute	900
Unit Code			10
Baud (Bits per Second)			150
One Character Signal Length 66.67MS			
Character Structure	{	1 Start Bit	6.67 MS
		7 Info Bits	46.69 MS
		1 Parity Bit	6.67 MS
		1 Stop Bit	6.67 MS
Printer and Punch		500 RPM	(2 cycle)

BASIC MODEL 37/300 BLOCK DIAGRAM ON-LINE OPERATION





37

model

Model 37 (EIA) RS-232-B Interface

Pin No.		Pin No.	
1	Protective Ground (AA) —This lead is connected to the framework of the set and electrically isolated from signal ground.	6	Data Set Ready (CC) —An "on" condition at this lead causes operation of the appropriate set motors.
2	Transmitted Data (BA) —This lead carries data output from the set when on-line mode. It is held marking when in local mode. A receiving-only set keeps this lead marking.	7	Signal Ground (AB) —This lead is a common return for all signal circuits.
3	Received Data (BB) —This lead carries incoming data from the line when the terminal is on-line condition. If this lead is open, the set will act as if a marking signal was being received.	20	Data Terminal Ready (CD) —This lead is held "on" when the terminal is ready to receive a message. The terminal is prepared to receive when: 1. No alarms are present. 2. The equipment is not out of service. 3. At least one receiving device (typing unit or punch) is on-line.
4	Request-to-Send (CA) —This lead is wired permanently "on" in the terminal.		
	Clear-to-Send (CB) —This lead activates the proceed lamp by an "on" condition allowing on-line transmission. When "off" the lamp is extinguished and transmission disabled.	22	Ring Indicator (CE) —This indication is used when the answer-back is employed. An "on" condition at this lead signals the beginning of a received call and primes the answer-back. The answer-back sends on clear-to-send.

Transmitting and Receiving Margins

Transmitting Margins. Bit timing: Any transition will be within 5% of a bit length from its correct transition point relative to the beginning of the start bit of the character. Minimum character length at 150 words per minute code will be 9.95 units.

Receiving Margins. Model 37 terminals equipped with a receiving signal regenerator and operating at 150 words per minute, 10 unit code are capable of correct operation with signals containing up to 40% telegraph distortion. This distortion is defined as the measure of the maximum displacement of any mark-to-space or space-to-mark transition in a character as referenced from the initial mark to space transition of the start element.

Platens will be available from 3 1/8" to 9" form widths.

Typing Unit Paper. The following are the dimensions of the standard yellow paper roll for friction feed printers available from paper suppliers.

Outside diameter 5"
Width 8.453" ± .031"
Length 400' ± 50'
Core Diameter 1"
Core thickness125"

Model 37 Printer Ribbons

Black Teletype Part No. 181129
Red-Black Teletype Part No. 326184

Set of parts to center various width paper on a friction-feed printer, Part No. 159362.

Clip to disable new-line feature Part No. 157274.

Tape reel assembly, Part No. 327000.

STANDARD SALES TERMS AND CONDITIONS February, 1969

The following are applicable to all transactions except U.S. Government end-use. Standard terms and Conditions relating to the latter will be supplied on request.

1. Price, Payment and Delivery

A. Prices are net f.o.b. carrier's equipment, our Skokie, Illinois plant (ex-factory, for export transactions); they do not include installation or maintenance.

B. Orders which call for deliveries beyond twelve months from the first day of the month following the receipt thereof must be specifically accepted in writing by us. Any deliveries made pursuant to rescheduling of an original order, at your request, shall be at our most-favored-customer price then in effect with respect to any such deliveries made after twelve months from the first day of the month following receipt of the original order.

C. Invoices dated during any month are due and payable 30 days from date (60 days, in U.S. funds, outside continental North America) unless your order specifies twentieth of the month following date of invoice.

D. If credit has not been established with us, domestic terms will be c.o.d. or cash in advance and export terms will be irrevocable L/C on The Northern Trust Company, Chicago, Illinois, or, for orders under \$500.00, S/D on The Northern Trust Company. Such L/C or S/D must be in the minimum amount of the purchase price of all items ordered, plus any other charges made by us; it may, at your option, also make provision for charges and fees payable to others.

E. Delivery for export will be made in the continental U.S. to a freight forwarder designated by you, whose responsibility it will be to make all export arrangements. Unless you expressly designate such a freight forwarder, you will be deemed to have authorized us to select a forwarder so to act on your behalf.

2. Taxes

Prices do not include any sales, use, excise, or similar taxes. These will be billed and paid as a separate item on the invoice.

3. Patents

A. Patent Infringement

With respect to any article furnished by us, we will at our own expense defend all suits alleging infringement of any United States patent by reason of the use or resale of said article for the purposes furnished, and will save you harmless from all expenses of defending said suits and from all payments which by final judgments therein you may be compelled to pay to the complainant as profit, damages, or costs on account of such infringement. If such use or resale shall be prevented by permanent injunction in any such suit, we will in addition, at our option either (1) replace said article, (2) modify it so that it will not infringe, (3) procure without cost to you the right to continue to use and resell, or (4) remove the infringing article and refund to you the amount paid to Teletype therefore, less a reasonable allowance for use, damage, and obsolescence. All of our obligations recited in this paragraph are on the condition that we be given immediate written notice of all claims of infringement and full authority to dispose thereof. In connection therewith you agree to furnish such reasonable assistance as we may request. In any event, however, our obligation shall not apply to any combination of said article with anything not furnished by us, and also shall not apply to any infringement arising out of compliance with your specifications. Our liability shall be limited to the obligations expressed in this paragraph.

B. No Implied License

The furnishing of any article does not convey any license, other than such as may be implied by law, to use the same in any patented system or combination.

4. Guarantee

We guarantee that everything supplied by us will be free from defects of workmanship and material and that, on receipt of notice from you, we will remedy any actual defects by, at our option, repair, replacement or allowing return for full credit. In no event shall anything be returned without express authorization. This paragraph states our entire obligation for defects.

5. Technical Literature

One copy of each applicable technical bulletin and/or specification will be furnished, no charge, with each set of equipment. Requests for additional copies should be addressed to our Equipment Sales Service Section.

6. Confirming Orders

All confirming orders must be clearly marked, otherwise we will assume no liability for duplicate shipments.

7. Packaging, Packing and Marking

A. Our prices include only our standard commercial packaging, packing and marking for domestic shipment.

B. Prices for special and export packaging, packing and marking will be quoted upon request.

8. Routing

Shipment will be made the most economical way unless otherwise directed in writing.

9. Delivery Loss and Delay

Risk of loss is on customer ex-factory, Skokie, Illinois. Delivery schedules are subject to delays caused by fire, flood, wind storm, and other acts of God, and to strikes, riots, and civil commotions.

10. Manufacturing, Inspection and Testing Information

A. Nothing furnished hereunder is subject to test or inspection at our plant by the customer.

B. We will not furnish manufacturing drawings, information, or samples of our products.

11. Return of Equipment or Parts not Covered by Product Guarantee

Prior written authorization must be given before any equipment or parts are returned for credit or repair.

12. Teletype Training Center

Teletype Corporation operates a tuition-free training center for instruction of key customer personnel in the maintenance of Teletype equipment. For details, please write to Teletype Corporation, Technical Training Center, 201 North Wells Street, Chicago, Illinois 60606.

Telephone: (312) 346-0585.

model 37



customer maintenance training

As a continuing service to users of our equipment, Teletype Corporation operates a tuition-free technical training center for instruction in maintenance of Teletype equipment. The training program offered is designed to give your key maintenance personnel a basic working knowledge of Teletype equipment and its uses. We recommend and urge our customers to take advantage of the courses offered. For details, please write: Teletype Corporation Technical Training Center, 201 North Wells Street, Chicago, Illinois 60606 — Telephone: (312) 346-0585



TELETYPE CORPORATION

GENERAL OFFICES: 5555 Touhy Avenue, Skokie, Illinois 60076 • Telephone: 312 982-2000 • TWX: 910-223-3611 and TELEX: 25-4051 (both have 24-hour automatic answering service)

AREA OFFICES: **Chicago** Sales—5555 W. Touhy Ave., Skokie, Ill. 60076, phone 312 982-2500 • **Product Service**—9930 Derby Lane, Westchester, Ill. 60153, phone 312 345-7920 • **Los Angeles:** 5720 E. Washington Blvd., City of Commerce, Calif. 90022 • Sales—phone 213 724-6040 • **Product Service**—phone 213 724-5051 • **New York:** 140 Sylvan Ave., Englewood Cliffs, N.J. 07632 • Sales—phone 201 461-7070 • **Product Service**—phone 201 947-7300 • **Washington, D.C.:** 1800 N. Kent St., Arlington, Va. 22209 • Sales—phone 703 528-6050 • **Product Service**—phone 703 522-7118